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Alberta

Traffic Collision Statistics

1994


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1994 Overview

- The number of **traffic fatalities** increased **3.1%** over the past year from 383 deaths in 1993 to 395 deaths in 1994.
- The number of **traffic injuries** increased **4.8%** over the past year from 19252 injuries in 1993 to 20169 in 1994.
- The number of **traffic collisions** increased **0.1%** over the past year from 84588 collisions in 1993 to 84640 in 1994.
- The highest number of **fatal collisions** occurred in **May**.
- **Friday** was the most collision-prone day of the week. However, more fatal collisions occurred on **Saturday**.
- The most collision-prone period of time was the **afternoon rush-hour**.
- **Casualty rates** were highest for persons between the **ages of 15 and 24**.
- **Male drivers** between the **ages of 16 and 19** had the highest involvement rate of all drivers involved in casualty collisions.
- **Driver error** was recorded for **48.7%** of drivers involved in casualty collisions.
- **Fatal collisions** occurred most frequently in **rural areas**, whereas **injury and property damage collisions** occurred more frequently in **urban areas**.
- **11 people** were killed in collisions involving motorcycles; a **five-year low**.
- **51.9% of pedestrians** involved in **fatal collisions** had consumed alcohol prior to the collision compared to **15.9% of pedestrians** in **injury collisions**.
- **18.8% of drivers** involved in **fatal collisions** had consumed alcohol prior to the crash compared to **6.9% of drivers** in **injury collisions**.
- Collision involved restraint users had a much lower injury rate (**13.1%**) than those not using restraints (**35.2%**).

1994 Overview

- The number of traffic fatalities increased 7% over the past year from 265 deaths in 1993 to 284 deaths in 1994.
- The number of traffic injuries increased 4.8% over the past year from 10,000 injuries in 1993 to 10,479 in 1994.
- The number of traffic collisions increased 6.1% over the past year from 14,859 collisions in 1993 to 15,760 in 1994.
- The highest number of fatal collisions occurred in May.
- Friday was the most collision-prone day of the week. However, more collisions occurred on Saturdays.
- The most collision-prone period of time was the afternoon/evening.
- Casualty rates were highest for drivers between the ages of 16 and 24.
- Side-impact between the ages of 16 and 24 had the highest involvement rate at 40 drivers involved in casualty collisions.
- Driver error was reported for 45.7% of drivers involved in casualty collisions.
- Fatal collisions occurred most frequently in rural areas, without signs and properly damaged collisions occurred more frequently in urban areas.
- 11 people were killed in collisions involving motorcyclists, a five-year low.
- 51.3% of pedestrians involved in fatal collisions had consumed alcohol prior to the collision compared to 10.8% of nonpedestrians in injury collisions.
- 16.8% of drivers involved in fatal collisions had consumed alcohol prior to the collision compared to 5.5% of drivers in injury collisions.
- Collision involving motorcyclists had a much lower death rate (1.1%) than those not using seatbelts (32.3%).

Preface

The purpose of this report is to provide an overview of the "who", "what", "when", "where", "why", and "how" of traffic collisions which occurred in Alberta during 1994. Although the report is general in nature, it pays particular attention to casualty collisions, that is, those collisions which resulted in death or injury. Legislation in Alberta requires that a traffic collision, which results in either death, injury or property damage to an apparent extent of \$1000.00 or more, be reported immediately to an authorized peace officer. The officer completes a standardized collision report form which provides information on various aspects of the traffic collision. This report is based on the data collected from these report forms.

The collision report form is issued with standard instructions to every police service within Alberta, to be completed by the officer attending the scene of a motor vehicle collision or at a police station. Police priorities at the scene of a collision are to care for the injured, protect the motoring public and clear the roadway. Completion of the collision report form is a secondary, but necessary task.

After completion, the information on the collision report form is coded for input to computer files. The Alberta Collision Information System, which has been operational since 1978, undergoes several manual and computerized inspections each year in order to ensure maximum accuracy of the final data output. This collision information is used to make Alberta's roads safer for all road users. Due to continuing police investigation, some numbers presented in this report may be subject to revision. It should also be noted that not all percentage columns will total 100 due to rounding error. However, the patterns and trends detailed in this report represent an accurate description of Alberta's traffic collision picture.

Preface

The purpose of this report is to provide an overview of the "what", "why", "where", "when", and "how" of traffic collisions which occurred in Alberta during 1994. Although the report is general in nature, it gives particular attention to casualty collisions, that is those collisions which resulted in death or injury. Legislation in Alberta requires that a traffic collision, which results in either death, injury or property damage to an amount of \$1000.00 or more, be reported immediately to an authorized police officer. The report contains a standardized collision report form which provides information on various aspects of the traffic collision. This report is based on the data collected from these reports.

The collision report form is based on a standard collision report form which is used by all police officers in Alberta. It is completed by the officer attending the scene of a major traffic collision or a minor collision. Police officers are required to complete a collision report form for every collision that occurs on the roadway. Completion of the collision report form is a secondary, but necessary task.

After completion, the information on the collision report form is sent to the nearest police station. The Alberta Collision Information System, which has been operational since 1975, undergoes several manual and computerized steps each year in order to ensure maximum accuracy of the final data output. The collision information is used to provide Alberta's road safety statistics. Due to continuing police investigations, some numbers reported in this report may be subject to revision. It should also be noted that not all police reports are included in the 100% due to rounding errors. However, the general trend is detailed in this report to provide an accurate description of Alberta's traffic collision picture.

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Glossary

Alcohol Impaired - In the judgement of the police officer, driving ability was impaired by alcohol consumption. Whether or not the subject was actually charged is not taken into consideration by the collision report form.

Casualty Collision - A vehicle collision which results in either a fatal or personal injury.

Drinking Driver - Refers to those drivers judged by the police officer as having been drinking prior to the collision or as being alcohol impaired at the time of the collision. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

Fatality - A fatality is the death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

Had Been Drinking - In the judgement of the police officer, the driver had recently consumed alcohol but his driving ability was not obviously impaired.

Major Injury - Persons with injuries or complaint of pain that went to the hospital and were subsequently admitted even if for observation only.

Minor Injury - Persons with injuries or complaint of pain that went to the hospital, were treated in emergency (or refused treatment) and SENT HOME without ever being admitted to the hospital. (Also includes people who indicated that they intended to seek medical treatment).

Motorcyclist - Refers to drivers and passengers of motorcycles.

Occupant Casualties - Refers to people who were injured or killed as a result of a vehicle collision and were identified as being either a vehicle driver or passenger.

Property Damage - A vehicle collision which resulted in property damage exceeding \$1000.00.

Reportable Collision - A vehicle collision which resulted in death, injury or property damage greater than \$1000.00.

Rural - Any area outside of that defined as 'Urban'.

Urban - Any area within the corporate boundaries of a city, town, village or hamlet.

1994 Traffic Collision Summary

Introduction

During 1994, 84640 collisions were recorded on Alberta roadways. Property damage collisions (over \$1000) represented 83.4% (70597) of this total while 16.2% (13691) were non-fatal injury collisions. Fatal collisions accounted for 0.4% (352) of the total reported collisions.

Five Year Trends

The fatal collision rate and fatality rate, in terms of 10,000 population for 1994, increased slightly from 1993 at 1.3 and 1.5.

Non-fatal injury collision rates and non-fatal injury rates have increased in 1994. In 1994, the non-fatal injury collision rate, in terms of 10,000 population, stands at 50.4.

In terms of 10,000 population, property damage and total collision rates are down, standing at 259.9 and 311.6, respectively, down from 1993.

Provincial Comparisons

In order to get a clear picture of Alberta's traffic injuries in comparison to other provinces, rates rather than absolute numbers are utilized. In this instance, rates per 10,000 population were examined.

In 1994, two provinces, recorded the same fatality rate as Alberta in terms of 10,000 population. Three provinces, Saskatchewan, Manitoba and Ontario, recorded higher injury rates than Alberta in 1994.

Table 1.1**Alberta Traffic Collisions****1990 - 1994**

Severity of Collision	1994	1993	1992	1991	1990
Fatal Collisions	352	330	316	359	357
Non-Fatal Injury Collisions	13691	13133	12661	13646	12619
Property Damage Collisions	70597	71125	72400	84530	106919
Total Reportable Collisions	84640	84588	85405	98535	119895
Number Killed	395	383	368	421	409
Number Injured	20169	19252	18685	19646	18604
Total Number of Casualties	20564	19635	19053	20067	19013

Observations

In 1994, the overall number of collisions increased 0.1% when compared to 1993. In 1994, injury collisions increased 4.3% and fatal crashes increased 6.7%. The number of fatalities increased by 3.1% from 1993 to 1994, and the number of injuries increased by 4.8%. In terms of the past five years, overall collisions were highest in 1990, lowest in 1992 and have increased slightly each year since 1992.

Notes:

1. On January 1, 1991 the reporting limit changed from \$500.00 to \$1000.00
2. Due to reporting problems, a small number of 1992 property damage only collisions which occurred in an urban centre were not reported to Alberta Transportation and Utilities. This, however, will not affect the trends reported in this report.
3. Due to continuing investigation, 1992 figures have been revised from the "Alberta Traffic Collision Statistics 1992" publication.

Table 1.2**Traffic Collision Rates****1990 - 1994**

Severity of Collision	Rate Per 10,000 Population*					Rate Per 10,000 Licensed Drivers*					Rate Per 10,000 Registered Vehicles*				
	1994	1993	1992	1991	1990	1994	1993	1992	1991	1990	1994	1993	1992	1991	1990
Fatal Collisions	1.3	1.2	1.2	1.4	1.4	1.8	1.7	1.7	1.9	1.9	1.8	1.7	1.7	1.9	1.9
Number Killed	1.5	1.4	1.4	1.7	1.7	2.0	2.0	1.9	2.2	2.2	2.0	2.0	1.9	2.2	2.2
Non-Fatal Injury Collisions	50.4	49.3	49.4	54.1	51.1	69.6	67.6	66.0	71.8	67.1	69.8	68.1	66.2	70.4	67.2
Number Injured	74.3	72.3	72.8	77.9	75.3	102.6	99.1	97.4	103.4	98.9	102.8	99.9	97.7	101.4	99.1
Property Damage Only Collisions	259.9	267.2	282.4	335.2	432.9	359.1	366.3	377.5	445.0	568.6	359.8	369.0	378.8	436.4	569.3
Total Reportable Collisions	311.6	317.7	333.0	390.8	485.4	430.5	435.6	445.1	518.7	637.7	431.4	438.8	446.6	508.6	638.3

Observations

The fatal collision rate and fatality rate, in terms of population increased slightly from 1993. In terms of licensed drivers, and registered vehicles for 1994, the fatality rate was unchanged from 1993.

Non-fatal injury collision rates and non-fatal injury rates, in terms of population are up slightly in 1994. They have also increased in terms of licensed drivers and registered vehicles.

Property damage and total collision rates dropped again in 1994 after reaching a five year high in 1990.

Note: On January 1, 1991 the reporting limit changed from \$500.00 to \$1,000.00

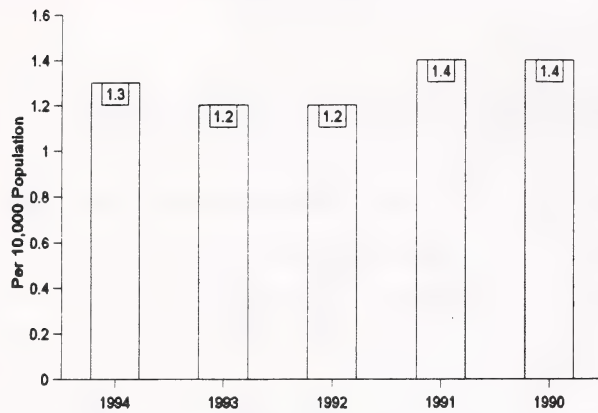
***Sources:**

Population - Based on estimates of the population by age and sex, July 1, 1994, supplied by Statistics Canada.

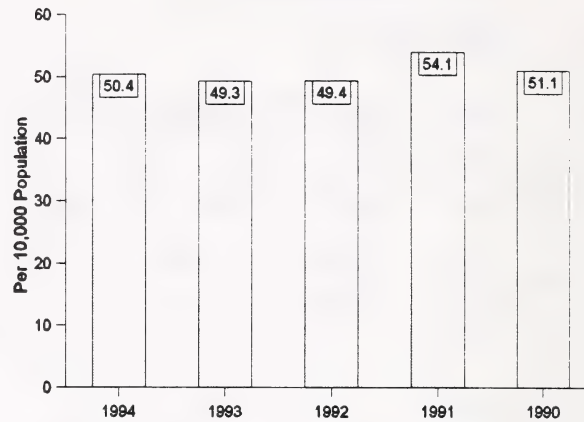
Licensed Drivers - Motor Vehicles, Alberta Registries, as of December 31, 1994.

Registered Vehicles - Motor Vehicles, Alberta Registries, as of December 31, 1994.

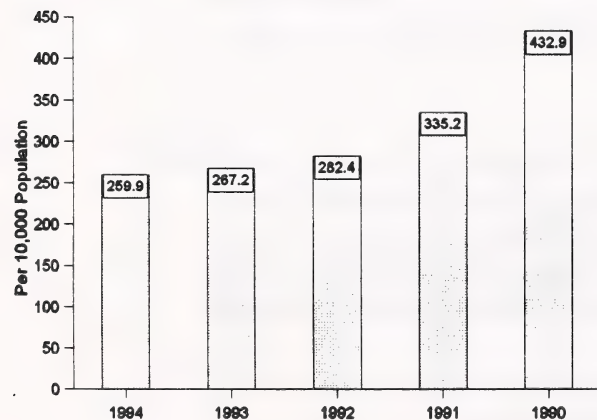
Fatal Collision Rates Alberta 1990-1994



Injury Collision Rates Alberta 1990-1994



Property Damage Collision Rates Alberta 1990-1994



Overall Collision Rates Alberta 1990-1994

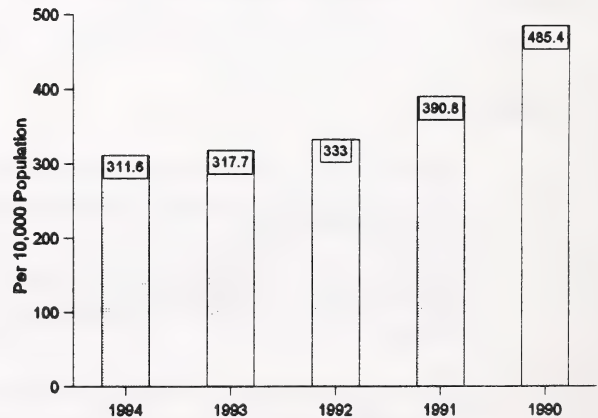


Figure 1

Table 1.3**Provincial Comparison of Casualty Rates Per 10,000 Population****1990 - 1994**

	1994		1993		1992		1991		1990	
	Fatal	Injury	Fatal	Injury	Fatal	Injury	Fatal	Injury	Fatal	Injury
Alberta	1.5	74.3	1.4	72.3	1.4	72.8	1.7	77.9	1.7	75.3
British Columbia	1.5	*	1.4	132.8	1.4	146.5	1.7	147.4	2.1	160.7
Saskatchewan	1.5	79.8	1.5	79.5	1.4	80.5	1.7	76.5	1.5	76.7
Manitoba	1.1	122.3	1.2	139.9	1.1	144.3	1.1	139.1	1.1	123.4
Ontario	0.9	82.4	1.1	84.8	1.1	90.1	1.1	91.4	1.2	104.4
Quebec	1.1	66.9	1.3	69.1	1.4	73.0	1.5	74.3	1.6	78.6
New Brunswick	1.0	70.7	1.9	77.1	1.8	83.9	1.6	95.3	2.2	100.6
Nova Scotia	1.0	65.9	1.1	70.6	1.2	67.7	1.3	68.2	1.7	61.8
Prince Edward Island	1.3	54.1	1.5	60.9	1.0	69.3	2.4	75.5	2.2	83.2
Newfoundland	0.6	48.0	0.8	52.2	0.8	54.0	0.9	54.9	1.2	53.7

Observations

During 1994, two provinces, recorded the same fatality rate as Alberta in terms of 10,000 population. Three provinces, Saskatchewan, Manitoba and Ontario, recorded higher injury rates than Alberta in 1994.

*Figures not available at time of printing.

Sources: Casualty statistics supplied by each province. Population estimates, as of July 1, 1994, Statistics Canada.

Provincial Traffic Fatality Rates 1994

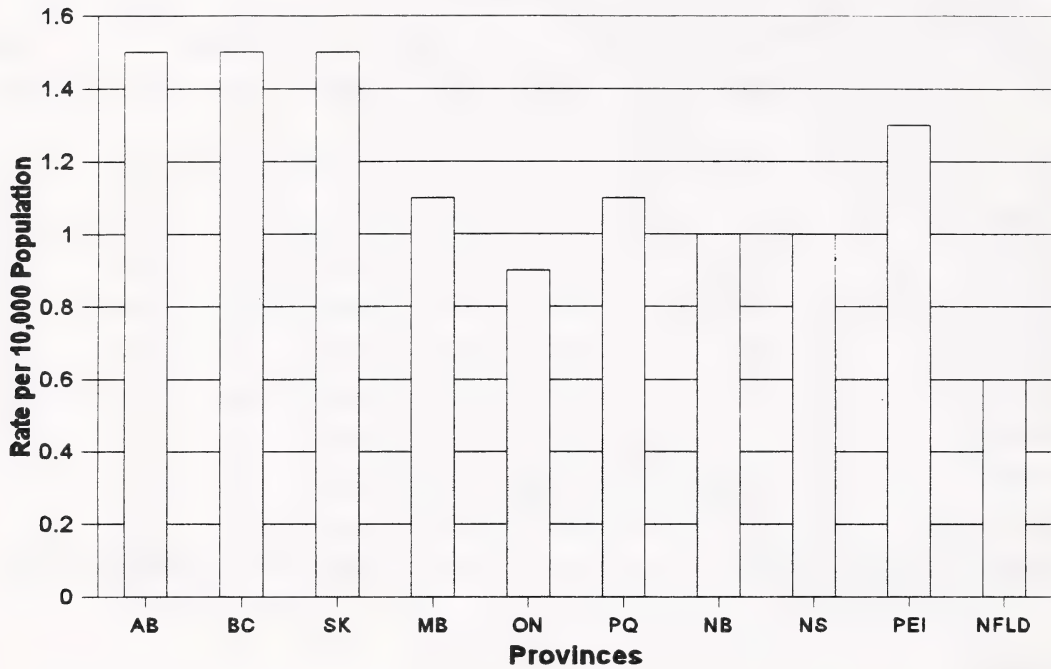


Figure 2

When the Collisions Occurred

Month

The month of December experienced more casualty collisions than other months. The highest number of property damage collisions was recorded during the month of January.

Day of Week

The daily distribution of collisions indicated that Friday was the most collision-prone day of the week. The largest number of fatal crashes occurred on Saturday.

Time

The afternoon rush hour period (3:00 p.m. - 6:59 p.m.) accounted for the highest proportion of collisions. The least collision-prone time period was the early morning (3:00 a.m. - 6:59 a.m.).

Holidays

The four day Canada Day long weekend recorded the highest number of individuals killed and the Labour Day long weekend the highest number injured. The four day Remembrance Day period recorded the highest number of total collisions.

Table 2.1**Collision Occurrence by Month****1994**

Month	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
January	27	7.7	1189	8.7	8378	11.9	9594	11.3
February	17	4.8	1036	7.6	6851	9.7	7904	9.3
March	19	5.4	863	6.3	4837	6.9	5719	6.8
April	20	5.7	925	6.8	3705	5.2	4650	5.5
May	39	11.1	1079	7.9	4594	6.5	5712	6.7
June	33	9.4	1245	9.1	5221	7.4	6499	7.7
July	36	10.2	1150	8.4	5044	7.1	6230	7.4
August	28	8.0	1215	8.9	5081	7.2	6324	7.5
September	38	10.8	1217	8.9	5091	7.2	6346	7.5
October	27	7.7	1293	9.4	5779	8.2	7099	8.4
November	30	8.5	1126	8.2	7665	10.9	8821	10.4
December	38	10.8	1351	9.9	8238	11.7	9627	11.4
Unspecified	---	---	2	0.0	113	0.2	115	0.1
Total Number of Collisions	352	100.0	13691	100.0	70597	100.0	84640	100.0

Observations

The month of May experienced more fatal crashes than other months. The highest number of reported injury crashes was in December and the highest number of property damage collisions was in the month of January.

Table 2.2**Collision Occurrence by Day of Week****1994**

Day of Week	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Monday	37	10.5	1876	13.7	9551	13.5	11464	13.5
Tuesday	54	15.3	1996	14.6	10377	14.7	12427	14.7
Wednesday	54	15.3	1969	14.4	10137	14.4	12160	14.4
Thursday	49	13.9	1966	14.4	10392	14.7	12407	14.7
Friday	55	15.6	2365	17.3	12160	17.2	14580	17.2
Saturday	59	16.8	2058	15.0	10283	14.6	12400	14.7
Sunday	44	12.5	1448	10.6	7425	10.5	8917	10.5
Unspecified	---	---	13	0.1	272	0.4	285	0.3
Total Number of Collisions	352	100.0	13691	100.0	70597	100.0	84640	100.0

Observations

The daily distribution of collisions indicated that overall Friday was the most collision-prone day of the week. The largest number of fatal crashes occurred on Saturday.

Table 2.3**Collision Occurrence by Time Period****1994**

Time Period	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
11:00 p.m.- 2:59 a.m.	55	15.6	1149	8.4	6214	8.8	7418	8.8
3:00 a.m.- 6:59 a.m.	37	10.5	617	4.5	3322	4.7	3976	4.7
7:00 a.m.- 10:59 a.m.	48	13.6	2165	15.8	11853	16.8	14066	16.6
11:00 a.m.- 2:59 p.m.	58	16.5	3319	24.2	16617	23.5	19994	23.6
3:00 p.m.- 6:59 p.m.	87	24.7	4214	30.8	19350	27.4	23651	27.9
7:00 p.m.- 10:59 p.m.	67	19.0	2025	14.8	11570	16.4	13662	16.1
Unspecified	---	---	202	1.5	1671	2.4	1873	2.2
Total Number of Collisions	352	100.0	13691	100.0	70597	100.0	84640	100.0

Observations

The afternoon rush hour period (3:00 p.m. - 6:59 p.m.) accounted for the largest percentage (27.9) of collisions occurring in a 24 hour period. The least collision-prone time period was the early morning (3:00 a.m. - 6:59 a.m.).

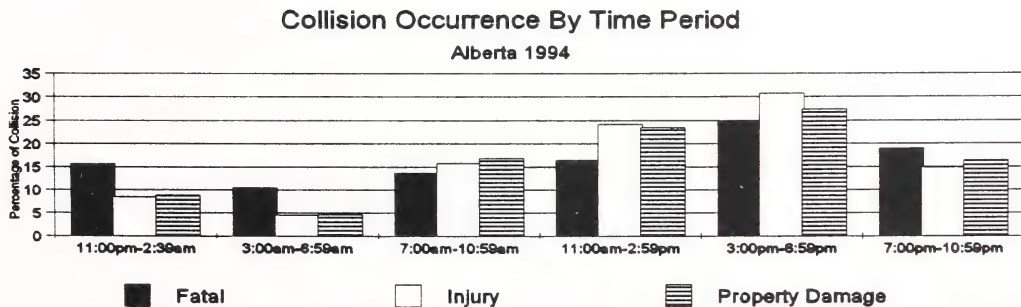
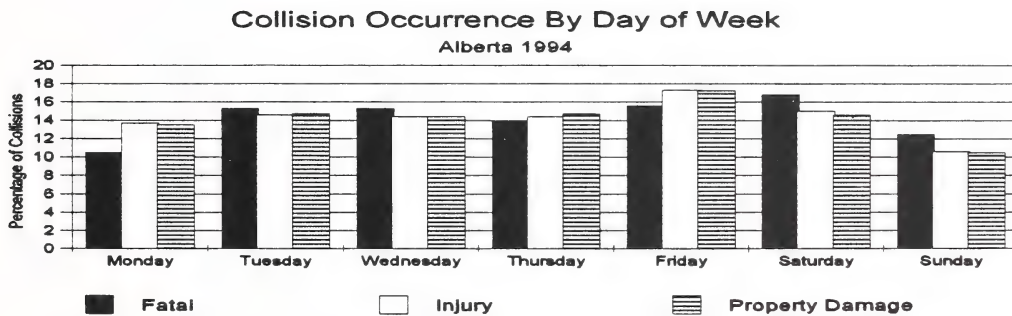
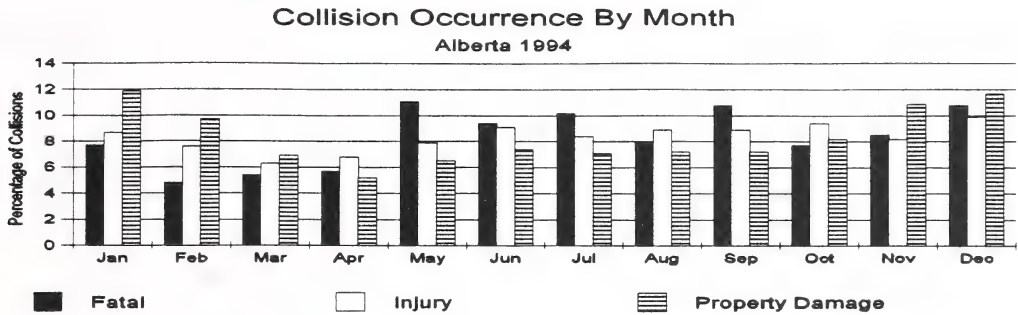


Figure 3

Table 2.4**Collisions During 1994 Holidays**

Holidays	Number Killed N	Number Injured N	Total Collisions* N
New Year's Day (January 1)	---	47	203
Family Day (February 18-21)	2	212	998
Easter (March 31-April 4)	2	129	629
Victoria Day (May 20-23)	6	260	765
Canada Day Long Weekend (June 30-July 3)	12	217	826
August Long Weekend (July 29-Aug 1)	5	236	797
Labour Day (September 2-5)	8	271	716
Thanksgiving (October 7-10)	5	235	763
Remembrance Day Long Weekend (November 10-13)	6	206	1068
Christmas Season (December 23-26)	6	168	770
Total	52	1981	7535

Observations

The four day Canada Day weekend recorded the highest number of individuals killed. The four day Labour Day long weekend recorded the highest number injured. The four day Remembrance Day period recorded the highest number of total collisions.

*Total collisions includes fatal, injury, and property damage collisions.

Victims

Road User Class

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 5.4% and 2.5% of the total casualties, respectively.

Age of Casualties

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children 14 and under and people 65 years of age and over.

Table 3.1**Injuries and Fatalities by Road User Class****1994**

Road User Class	Persons Killed		Persons Injured		Total Casualties	
	N	%	N	%	N	%
Drivers	210	53.2	11333	56.2	11543	56.1
Passengers	102	25.8	6411	31.8	6513	31.7
Pedestrians	55	13.9	1059	5.3	1114	5.4
Bicyclists	6	1.5	656	3.3	662	3.2
Motorcyclists	11	2.8	494	2.4	505	2.5
Other	10	2.5	124	0.6	134	0.7
Unspecified	1	0.3	92	0.5	93	0.5
Total Casualties	395	100.0	20169	100.0	20564	100.0

Observations

The majority of traffic victims were drivers and passengers of vehicles. Pedestrians and motorcyclists accounted for 5.4% and 2.5% of the total casualties, respectively.

Table 3.2**Age of Casualties****1994**

Age In Years	Persons Killed		Persons Injured		Casualty Rate Per 10,000 Population*
	N	%	N	%	
Under 5	4	1.0	347	1.7	16.9
5 - 9	8	2.0	643	3.2	30.8
10 - 14	8	2.0	841	4.2	41.4
15 - 19	58	14.7	3106	15.4	167.9
20 - 24	47	11.9	2853	14.1	146.8
25 - 29	35	8.9	2185	10.8	100.4
30 - 34	37	9.4	2172	10.8	84.2
35 - 44	65	16.5	3352	16.6	73.4
45 - 54	42	10.6	1948	9.7	66.7
55 - 64	28	7.1	1130	5.6	57.8
65 and over	63	15.9	1217	6.0	49.6
Unspecified	---	---	375	1.9	---
Total Casualties	395	100.0	20169	100.0	

Observations

Casualty rates per 10,000 population were highest for persons between the ages of 15 and 24. The lowest casualty rates were recorded for children (14 years of age and younger) and people 65 and over.

* Based on estimates of the Alberta population by age groups and sex, July 1, 1994, Statistics Canada.

Age of Casualties Alberta 1994

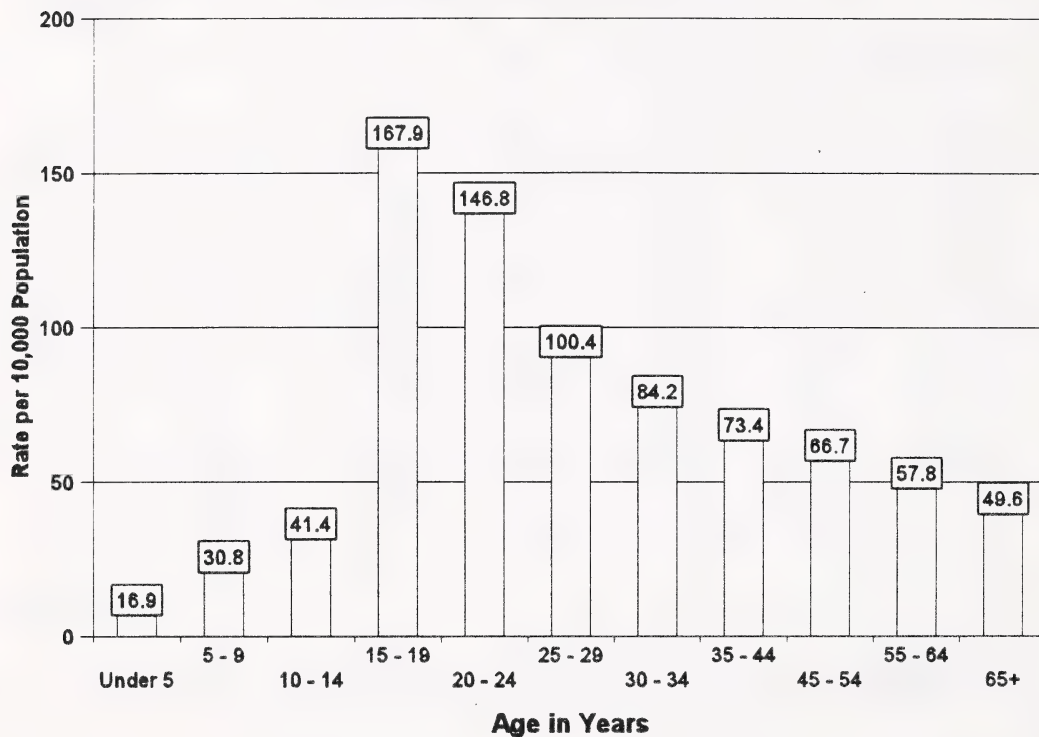


Figure 4

Drivers

Age and Sex of Drivers

Collision rates per 1000 licensed drivers indicated that 16-19 year olds were more likely to be involved in a casualty collision than any other age group.

Driver Actions

Driver error or misjudgement was cited for 48.7% of drivers involved in casualty collisions. Following too closely, running off the road, and left turn across path were the most frequently identified driver actions contributing to casualty collisions.

Table 4.1**Age and Sex of Drivers Involved in Casualty Collisions:****Per 1,000 Licensed Drivers****1994**

Age of Driver	Males			Females			Total*		
	N	%	Per 1000* Licensed Drivers	N	%	Per 1000** Licensed Drivers	N	%	Per 1000** Licensed Drivers
Under 16	315	1.3	21.1	154	0.6	13.8	472	1.9	18.1
16 - 17	775	3.1	26.1	513	2.0	20.0	1290	5.1	23.3
18 - 19	1053	4.2	27.8	576	2.3	16.4	1632	6.5	22.3
20 - 24	2306	9.2	22.4	1241	4.9	13.2	3552	14.2	18.0
25 - 34	4014	16.0	15.7	2229	8.9	9.5	6244	24.9	12.7
35 - 44	3348	13.3	13.1	1922	7.7	8.4	5274	21.0	10.9
45 - 54	1961	7.8	12.2	1033	4.1	7.3	2994	11.9	9.9
55 - 64	1162	4.6	11.3	485	1.9	5.9	1647	6.6	8.9
65 and over	1010	4.0	10.2	428	1.7	5.9	1438	5.7	8.4
Unspecified	162	0.6	---	53	0.2	---	556	2.2	---
Total Number of Drivers	16106	64.2		8634	34.4		25099	100.0	

Observations

Collision rates per 1000 licensed drivers indicated that 16-17 year olds were more likely to be involved in a casualty collision than any other age group. The next age group most likely to be involved in casualty crashes was 18 to 19 year olds.

*Total includes drivers whose sex was not specified on the collision report form.

**Source: Alberta Registries - Motor Vehicles. Operator Statistics, December 31, 1994.

Age and Sex of Drivers Involved in Casualty Collisions Alberta 1994

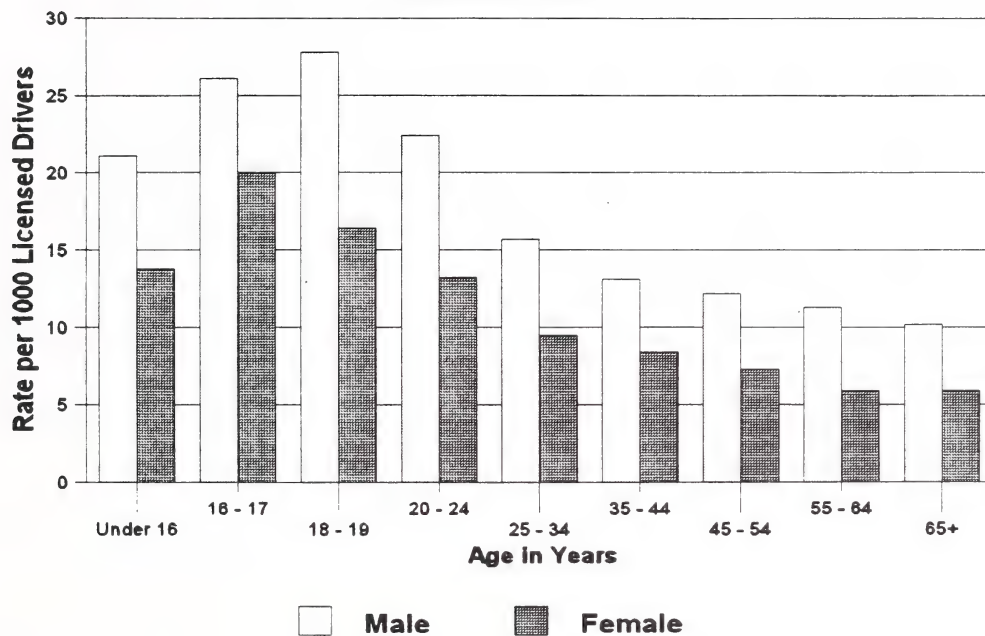


Figure 5

Table 4.2

Actions of Drivers Involved in Casualty Collisions*

1994

Driver Action	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Driving Properly	204	43.3	11347	51.4	11551	51.2
Followed too Closely	5	1.1	2284	10.3	2289	10.2
Ran Off Road	73	15.5	1510	6.8	1583	7.0
Left Turn Across Path	12	2.5	1233	5.6	1245	5.5
Stop Sign Violation	36	7.6	911	4.1	947	4.2
Disobey Traffic Signal	10	2.1	918	4.2	928	4.1
Left of Center	49	10.4	261	1.2	310	1.4
Fail to Yield Right of Way to Pedestrian	8	1.7	299	1.4	307	1.4
Improper Lane Change	2	0.4	255	1.2	257	1.1
Yield Sign Violation	2	0.4	247	1.1	249	1.1
Fail to Yield Right of Way Uncontrolled Intersection	3	0.6	227	1.0	230	1.0
Backed Unsafely	2	0	205	0.9	207	0.9
Improper Turn	2	0.4	181	0.8	183	0.8
Improper Passing	4	0.8	136	0.6	140	0.6
Other	59	12.5	2061	9.3	2120	9.4
Total Number of Drivers	471	100.0	22075	100.0	22546	100.0

Observations

Driver error or misjudgement was cited for 48.7% of drivers involved in casualty collisions. Following too closely, running off the road, and left turn across path were the most frequently identified driver actions contributing to casualty collisions.

*Based on those cases where driver action was specified on the collision report form.

Vehicles

Types of Vehicles

Passenger cars and pickup trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, motorcycles represented 1.8% and bicycles 2.6% of the vehicles involved in casualty collisions.

Vehicular Factors

Only 1.4% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common defects involved defective brakes and tire failure.

Point of Impact

The most common point of impact in casualty collisions involved the front of the vehicle. Approximately 39.9% of the impacts involved the center front.

Table 5.1**Types of Vehicles Involved in Casualty Collisions*****1994**

Type of Vehicle	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
Passenger Car	229	41.9	15503	61.9	15732	61.5
Pickup Truck/Van	181	33.1	5533	22.1	5714	22.3
Mini-Van/MPV	31	5.7	1450	5.8	1481	5.8
Truck 4500 kg +	42	7.7	634	2.5	676	2.6
Bicycle	6	1.1	655	2.6	661	2.6
Truck Tractor	39	7.1	461	1.8	500	2.0
Motorcycle	11	2.0	455	1.8	466	1.8
Transit Bus	1	0.2	93	0.4	94	0.4
School Bus	---	---	40	0.2	40	0.2
Emergency Vehicle	---	---	36	0.1	36	0.1
Off Highway Vehicle	4	0.7	31	0.1	35	0.1
Construction Equipment	1	0.2	29	0.1	30	0.1
Motorhome	---	---	29	0.1	29	0.1
Farm Equipment	2	0.4	21	0.1	23	0.1
Other Bus	---	---	13	0.1	13	0.1
Intercity Bus	---	---	10	0.0	10	0.0
Motorized Snow Vehicle	---	---	7	0.0	7	0.0
Moped	---	---	4	0.0	4	0.0
Other	---	---	36	0.1	36	0.1
Total Number of Vehicles	547	100.0	25040	100.0	25558	100.0

Observations

Passenger cars and pickup trucks/vans were the vehicles most frequently involved in total casualty collisions. Overall, motorcycles represented 1.8% and bicycles 2.6% of the vehicles involved in casualty collisions. Truck tractors were 2.0% of total vehicles in casualty crashes, but 7.1% of vehicles in fatal crashes.

*Based on those cases where type of vehicle was specified on the collision report form.

Table 5.2**Vehicular Factors Involved in Casualty Collisions*****1994**

Vehicular Factors	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
No Apparent Defect	427	97.7	21042	98.5	21469	98.5
Defective Brakes	5	1.1	78	0.4	83	0.4
Tires Failed	---	---	49	0.2	49	0.2
Lighting Defect	3	0.7	26	0.1	29	0.1
Improper Load/Shift	---	---	10	0.0	10	0.0
Other	2	0.5	156	0.7	158	0.7
Total Number of Vehicles	437	100.0	21361	100.0	21798	100.0

Observations

Only 1.4% of vehicles involved in casualty collisions were identified as having a vehicle defect. The most common defects were defective brakes and tire failure.

*Based on those cases where a vehicle factor was specified on the collision report form.

Table 5.3**Point of Impact on Vehicles Involved in Casualty Collisions*****1994**

Point of Impact	Vehicles in Fatal Collisions		Vehicles in Non-Fatal Injury Collisions		Total Vehicles in Casualty Collisions	
	N	%	N	%	N	%
Center Front	235	46.5	9181	39.7	9416	39.9
Center Rear	18	3.6	4453	19.3	4471	18.9
Right Front	28	5.5	2343	10.1	2371	10.0
Left Front	39	7.7	1931	8.4	1970	8.3
Rollover	85	16.8	1366	5.9	1451	6.1
Right Side	32	6.3	1098	4.8	1130	4.8
Left Side	31	6.1	1061	4.6	1092	4.6
Left Rear	14	2.8	688	3.0	702	3.0
Right Rear	4	0.8	695	3.0	699	3.0
Attachment	11	2.2	149	0.6	160	0.7
Undercarriage	5	1.0	98	0.4	103	0.4
Top	3	0.6	40	0.2	43	0.2
Total Number of Vehicles	505	100.0	23103	100.0	23608	100.0

Observations

The most common point of impact in casualty collisions involved the front of the vehicle. 39.9% of the impacts involved the center front, while 18.9% of the impacts involved the center rear.

*Based on those cases for which the point of impact was specified on the collision report form.

Environment

Location

The majority of fatal crashes occurred in rural areas, whereas the majority of injury and property damage crashes occurred in urban areas.

Surface Condition

The majority (62.2%) of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was present in 22.3% of the casualty crashes.

Table 6.1**Location of Collisions****1994**

Location	Fatal Collisions		Non-Fatal Injury Collisions		Property Damage Only Collisions		Total Collisions	
	N	%	N	%	N	%	N	%
Urban	94	26.7	10530	76.9	56808	9.5	67432	79.7
Rural	258	73.3	3161	23.1	13789	1.5	17208	20.3
Total Number of Collisions	352	100.0	13691	100.0	70597	100.0	84640	100.0

Observations

Collisions which occurred in rural areas accounted for 73.3% of all fatal crashes. Collisions occurring in urban areas resulted in the highest proportion of non-fatal injury collisions (76.9%) and property damage crashes (79.7%).

Table 6.2**Casualty Collision Occurrence by Surface Condition****1994**

Surface Condition	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Dry	229	65.1	8499	62.1	8728	62.2
Slush/Snow/Ice	68	19.3	3065	22.4	3133	22.3
Wet	32	9.1	1275	9.3	1307	9.3
Loose Surface Material	12	3.4	274	2.0	286	2.0
Muddy	---	---	26	0.2	26	0.2
Other	3	0.9	60	0.4	63	0.4
Unspecified	8	2.3	492	3.6	500	3.6
Total Number of Collisions	352	100.0	13691	100.0	14043	100.0

Observations

The majority of casualty collisions occurred when surface conditions were dry. Slush, snow or ice was involved in 19.3% of fatal collisions and 22.3% of non-fatal injury collisions.

Special Types of Vehicles

Motorcycles

- Based on motorcycle registrations, the involvement rate of motorcycles in fatal and non-fatal injury collisions has decreased from 1993.
- 11 people were killed in collisions involving a motorcycle; a five-year low.
- The majority of motorcycle casualty collisions involved male drivers. Motorcycle drivers under the age of 25 had the highest involvement rate per 1000 licensed drivers. In particular 16 and 17 year old motorcycle drivers had an involvement rate per 1,000 licensed driver of 47.2, a rate over three times greater than that of the 20-24 year old motorcycle drivers.
- Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn, or violate a stop sign.
- Compared to drivers involved in all types of vehicle casualty collisions, motorcycle drivers were more likely to have consumed alcohol before the crash.
- Vehicular factors were involved in 3.4% of motorcycle casualty collisions compared to 1.4% of casualty collisions involving all types of vehicles.
- The majority of casualty collisions involving motorcycles occurred on dry roads.

Table 7.1**Casualty Collisions Involving Motorcycles****1990-1994**

Number of Motorcycles	1994	1993	1992	1991	1990
Fatal	11	21	17	19	16
Non-Fatal Injury	455	480	542	599	619
Total Number of Motorcycles	466	501	559	618	635
Casualties*					
Number Killed	11	24	19	19	15
Number Injured	532	572	634	695	729
Total Casualties in Collisions Involving Motorcycles	543	596	653	714	744
Number of Motorcycles Involved in Casualty Collisions Per 10,000 Registered Motorcycles**					
Fatal Collisions	3.0	5.9	4.5	4.9	4.2
Non-Fatal Injury Collisions	124.6	135.9	144.6	155.6	162.1

Observations

Based on motorcycle registrations, the involvement rate of motorcycles in fatal collisions and non-fatal injury collisions decreased in 1994. 11 people were killed in collisions involving a motorcycle; a five-year low.

*This refers to the total number of people killed and injured in collisions in which a motorcycle was involved. It does not refer to the number of motorcyclists killed and injured.

**Source: Based on vehicle registration statistics, Motor Vehicles, Alberta Registries, December 31, 1994.

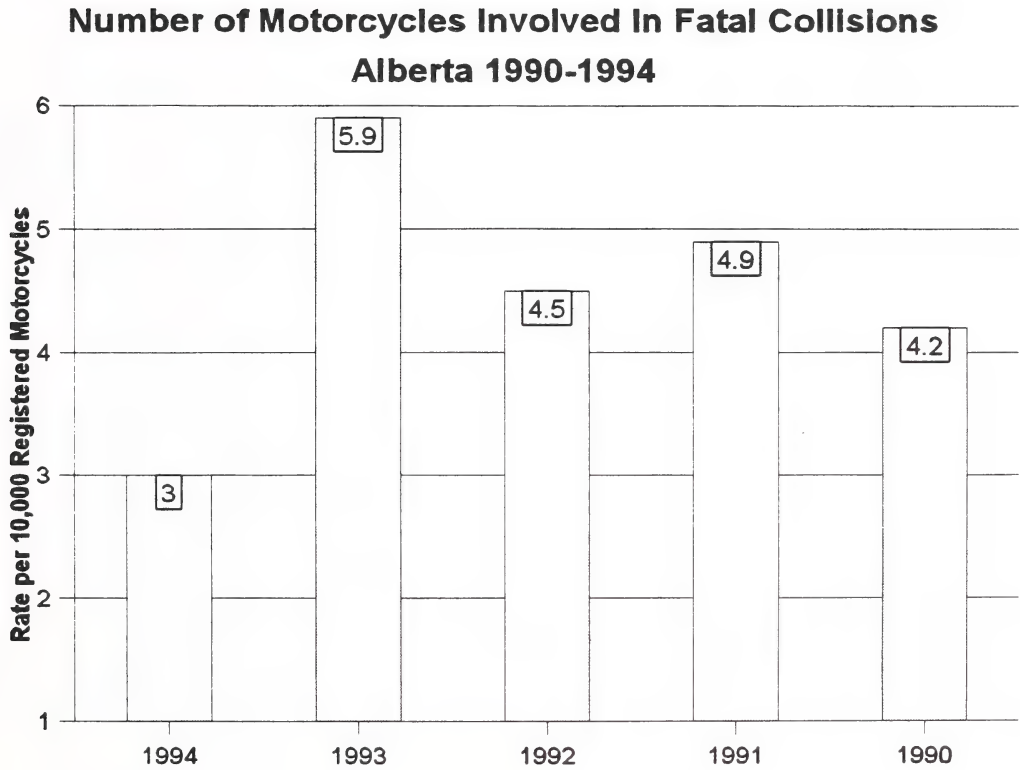


Figure 6

Table 7.2**Casualty Collision Involving Motorcycles:****Age and Sex of Motorcycle Driver****1994**

Age of Motorcycle Driver	Male		Female		Total*		Rate Per 1,000 Licensed Motorcycle Drivers**
	N	%	N	%	N	%	
Under 16	21	4.5	4	0.9	25	5.4	---
16 - 17	23	4.9	---	---	23	4.9	47.2
18 - 19	55	11.8	1	0.2	57	12.3	42.8
20 - 24	100	21.5	5	1.1	107	23.0	12.5
25 - 34	100	21.5	3	0.6	103	22.2	2.2
35 - 44	91	19.6	8	4.0	99	21.3	1.5
45 - 54	36	7.7	1	0.2	37	8.0	1.4
55 - 64	5	1.1	---	---	5	1.1	0.5
65 and over	3	0.6	1	0.2	4	0.9	0.9
Unspecified	4	0.9	---	---	5	1.1	---
Total Number of Motorcycle Drivers	438	94.2	23	7.2	465	100.0	

Observations

The majority of motorcycle casualty collisions involved male drivers. Based on involvement per 1,000 licensed operators motorcycle drivers under the age of 25 were most likely to be involved in collisions. In particular, 16 and 17 year old motorcycle drivers had the highest involvement rate per 1,000 licensed motorcyclists. The age group least likely to be involved in collisions were motorcyclists 45 years of age and over. These age and sex comparisons are limited due to the lack of driving exposure data. That is, in order to make valid age comparisons, it is important to take into account the number of kilometres driven annually by each age and sex group of motorcycle operators.

Note: In Alberta, class 6 (motorcycle) licenses are not issued to operators under 16 years of age.

*Total includes drivers whose sex was not specified on the collision report form.

**Source: Alberta Registries - Motor Vehicles. Operator Statistics, December 31, 1994.

Table 7.3

Casualty Collisions Involving Motorcycles:

Action of Motorcycle Driver*

1994

Action of Motorcycle Driver	N	%	Driver Action in
			Total Casualty Collisions (All Vehicle Types)
			%
Driving Properly	201	51.3	51.2
Ran Off Road	61	15.6	7.0
Followed Too Closely	22	5.6	10.2
Disobey Traffic Signal	10	2.6	4.1
Improper Passing	7	1.8	0.6
Left of Center	6	1.5	1.4
Left Turn Across Path	4	1.0	5.5
Stop Sign Violation	4	1.0	4.2
Improper Lane Change	4	1.0	1.1
Improper Turn	3	0.8	0.8
Failed to Yield Right of Way Uncontrolled Intersection	2	0.5	1.0
Yield Sign Violation	1	0.3	1.1
Failed to Yield Right of Way to Pedestrian	1	0.3	1.4
Other	66	16.8	9.4
Total Number of Motorcycle Drivers	392	100.0	

Observations

Improper driver actions were a contributory factor for 49.1% of the motorcyclists involved in casualty collisions. Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to run off the road or pass improperly. However, motorcycle drivers were less likely to follow too closely, make an unsafe left turn or violate a stop sign.

*Based on those cases where driver action was specified on the collision report form.

Table 7.4**Casualty Collisions Involving Motorcycles:****Condition of Motorcycle Driver*****1994**

Condition of Motorcycle Driver	N	%	Driver Condition in Total Casualty Collisions (All Vehicle Types)
			%
Normal	352	85.4	90.3
Had Been Drinking	41	10.0	3.8
Alcohol Impaired	13	3.2	3.4
Total Alcohol Involvement	54	13.2	7.2
Fatigued/Asleep	1	0.2	1.0
Other	5	1.2	1.4
Total Number of Motorcycle Drivers	412	100.0	

Observations

The motorcycle driver's condition was a contributory factor for 14.6% of these crashes. Compared to drivers involved in total casualty collisions, motorcycle drivers were more likely to have consumed alcohol prior to the crash.

*Based on those cases where driver condition was specified on the collision report form.

Table 7.5**Casualty Collisions Involving Motorcycles:****Vehicular Factors*****1994**

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Vehicle Types)
			%
No Apparent Defect	394	96.6	98.5
Tires Failed	5	1.2	0.2
Defective Brakes	2	0.5	0.4
Lighting Defect	1	0.2	0.1
Other	6	1.5	0.7
Total Number of Motorcycles	408	100.0	

Observations

Vehicular factors were involved in 3.4% of motorcycle casualty collisions, compared to 1.4% in casualty collisions involving all types of vehicles.

*Based on those cases where a vehicular factor was specified on the collision report form.

Table 7.6**Casualty Collisions Involving Motorcycles:****Month of Occurrence****1994**

Month	N	%
January	1	0.2
February	---	---
March	10	2.2
April	42	9.1
May	70	15.2
June	86	18.7
July	77	16.7
August	80	17.4
September	74	16.1
October	19	4.1
November	2	0.4
December	---	---
Unspecified	---	---
Total Number of Collisions	461	100.0

Observations

The months of May to September recorded the highest proportion of casualty crashes involving motorcycles.

Table 7.7**Casualty Collisions Involving Motorcycles:****Road Surface Condition*****1994**

Road Surface Condition	N	%
Dry	401	87.0
Wet	26	5.6
Loose Surface Material	19	4.1
Other	2	0.4
Unspecified	13	2.8
Total Number of Collisions	461	100.0

Observations

The majority of casualty collisions involving motorcycles occurred on dry roads. Wet roads were the scene of 5.6% of motorcycle casualty collisions. Loose material on the road surface was involved in 4.1% of motorcycle casualty crashes.

Special Types of Vehicles

Truck Tractors

- In 1994, there were 42 persons killed and 614 injured in collisions involving truck tractors. This represents an increase in casualties from 1993.
- Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road or make an improper lane change. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make a left turn across the path of an oncoming vehicle or disobey a traffic signal.
- Truck tractor drivers were less likely to consume alcohol before the crash than were drivers in total casualty collisions.
- Vehicular factors were more likely to be present in truck tractor casualty collisions than in total casualty collisions.
- The occurrence of casualty collisions involving truck tractors was highest in the months of January and November.

Table 7.8**Casualty Collisions Involving Truck Tractors:****1990-1994**

Number of Truck Tractors	1994	1993	1992	1991	1990
Fatal	39	38	31	51	39
Non-Fatal Injury	461	368	310	372	422
Total Number of Truck Tractors	500	406	341	423	461
Casualties*					
Number Killed	42	44	34	65	50
Number Injured	614	500	420	536	577
Total Casualties in Collisions Involving Truck Tractors	656	544	454	601	627

Observations

In 1994, there were 42 persons killed and 614 injured in collisions involving truck tractors. This represents an increase in casualties from 1993. The total number of truck tractors involved in casualty crashes increased in 1994, standing at 500 compared to the five-year low of 341 recorded in 1992.

*This refers to the total number of people killed and injured in collisions in which a truck tractor was involved. It does not refer to the number of truck tractor drivers killed and injured.

Table 7.9**Casualty Collisions Involving Truck Tractors:****Driver Action*****1994**

Driver Action	N	%	Driver Action in Total Casualty Collisions (All Types of Vehicles)
			%
Driving Properly	268	61.8	51.2
Ran Off Road	65	15.0	7.0
Followed Too Closely	20	4.6	10.2
Improper Lane Change	10	2.3	1.1
Left Turn Across Path	8	1.8	5.5
Stop Sign Violation	8	1.8	4.2
Left of Center	7	1.6	1.4
Disobey Traffic Signal	6	1.4	4.1
Improper Turn	4	0.9	0.8
Failed to Yield Right of Way Uncontrolled Intersection	3	0.7	1.0
Yield Sign Violation	3	0.7	1.1
Improper Passing	3	0.7	0.6
Backed Unsafely	2	0.5	0.9
Other	27	6.2	9.4
Total Number of Drivers	434	100.0	

Observations

Improper driver actions were exhibited by approximately 38.2% of the truck tractor drivers involved in casualty collisions. Compared to drivers of other vehicles, truck tractor drivers were more likely to run off the road or make an improper lane change. However, operators of truck tractors were less likely than other vehicle operators to follow too closely, make a left turn across the path of an oncoming vehicle or disobey a traffic signal.

*Based on those cases where driver action was specified on the collision report form.

Table 7.10**Casualty Collisions Involving Truck Tractors:****Driver Condition*****1994**

Driver Condition	N	%	Driver Condition in Total Casualty Collisions (All Types of Vehicles)
			%
Normal	409	94.5	90.3
Had Been Drinking	2	0.5	3.8
Alcohol Impaired	3	0.7	3.4
Total Alcohol Involvement	5	1.2	7.2
Fatigued/Asleep	14	3.2	1.0
Other	5	1.2	1.4
Total Number of Drivers	433	100.0	

Observations

The condition of the truck tractor driver was a contributory factor for 5.6% of the drivers involved. Truck tractor drivers were less likely to consume alcohol before the crash than were drivers involved in total casualty collisions. However, they were more likely to have been fatigued or asleep at the time of the crash.

*Based on those cases where driver condition was specified on the collision report form.

Table 7.11**Casualty Collisions Involving Truck Tractors:****Vehicular Factors*****1994**

Vehicular Factors	N	%	Vehicular Factors in Total Casualty Collisions (All Types of Vehicles)
			%
No Apparent Defect	432	97.5	98.5
Defective Brakes	4	0.9	0.4
Improper Load/Shift	2	0.5	0.0
Tires Failed	2	0.5	0.2
Other	3	0.7	0.7
Total Number of Truck Tractors	443	100.0	

Observations

Vehicular factors were involved in 2.6% of truck tractor casualty collisions. Vehicular factors were more likely to be present in truck tractor collisions than in total casualty collisions.

*Based on those cases where vehicular factor was specified on the collision report form.

Table 7.12**Casualty Collisions Involving Truck Tractors:****Month of Occurrence****1994**

Month	N	%
January	84	17.5
February	44	9.1
March	33	6.9
April	26	5.4
May	21	4.4
June	39	8.1
July	29	6.0
August	31	6.4
September	38	7.9
October	33	6.9
November	54	11.2
December	49	10.2
Total Number of Collisions	481	100.0

Observations

The occurrence of casualty collisions involving truck tractors was highest in the month of January. The lowest number of truck tractor casualty collisions occurred during May.

Special Types of Vehicles

Trains

- In 1994, 8 people were killed and 52 people were injured in crashes in which a train was involved. The number of casualties involving trains has increased from 1993.
- The largest number of casualty collisions involving trains occurred in the month of February.
- A large percentage of drivers involved in collisions with a train disobeyed the traffic signal (34.2%) or failed to yield the right of way at an uncontrolled intersection (21.1%).

Table 7.13**Casualty Collisions Involving Trains:****1990-1994**

Number of Trains	1994	1993	1992	1991	1990
Fatal	6	6	8	5	6
Non-Fatal Injury	42	28	17	31	24
Total Number of Trains	48	34	25	36	30
Casualties*					
Number Killed	8	9	14	9	6
Number Injured	52	31	29	41	32
Total Casualties in Collisions Involving Trains	60	40	43	50	38

Observations

The number of trains involved in casualty collisions increased from 1993, as did the number of casualties resulting from these collisions.

*This refers to the total number of people killed and injured in collisions involving a train.

Table 7.14**Casualty Collisions Involving Trains:****Month of Occurrence****1994**

Month	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
January	1	16.7	2	4.8	3	6.3
February	1	16.7	7	16.7	8	16.7
March	1	16.7	1	2.4	2	4.2
April	---	---	2	4.8	2	4.2
May	1	16.7	2	4.8	3	6.3
June	1	16.7	3	7.1	4	8.3
July	---	---	3	7.1	3	6.3
August	---	---	---	---	---	---
September	---	---	7	16.7	7	14.6
October	---	---	5	11.9	5	10.4
November	1	16.7	6	14.3	7	14.6
December	---	---	4	9.5	4	8.3
Total Number of Collisions	6	100.0	42	100.0	48	100.0

Observations

The largest number of casualty collisions involving trains occurred in the month of February.

Table 7.15**Casualty Collisions Involving Trains:****Driver Action*****1994**

Driver Action	Drivers in Fatal Collisions		Driver in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Disobey Traffic Signal	3	60.0	10	30.3	13	34.2
Failed to Yield Right of Way Uncontrolled Intersection	---	---	8	24.2	8	21.1
Driving Properly	---	---	4	12.1	4	10.5
Stop Sign Violation	1	20.0	1	3.0	2	5.3
Other	1	20.0	10	30.3	11	28.9
Total Number of Drivers	5	100.0	33	100.0	38	100.0

Observations

A large percentage of drivers involved in collisions with a train failed to yield the right of way at an uncontrolled intersection or disobeyed a traffic signal.

*Based on those cases where driver action was specified on the collision report form.

Pedestrians

- Pedestrian casualty collisions were fairly evenly distributed across all months of the year. October accounted for the largest number of collisions, while February and April experienced the least number of pedestrian crashes.
- Pedestrian casualty collisions were most likely to occur on Wednesdays and Fridays and least likely to occur on Sundays.
- Pedestrian casualty collisions were most likely to occur during the evening rush-hour period (3:00 p.m. to 6:59 p.m.).
- 27.6% of the drivers in collisions involving a pedestrian were recorded as failing to yield the right of way to the pedestrian.
- The casualty rate per population was highest for pedestrians between the ages of 15 and 19.
- Of pedestrians involved in injury collisions, 15.9% had consumed alcohol before the collision, compared to 51.9% involved in fatal collisions.
- Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for the age group 20-24 years of age.

Table 8.1**Casualty Collisions Involving Pedestrians:****Month of Occurrence****1994**

Month of Collision	N	%
January	81	7.5
February	72	6.6
March	84	7.7
April	72	6.6
May	75	
June	92	8.5
July	83	7.7
August	87	8.0
September	111	10.2
October	114	10.5
November	111	10.2
December	102	9.4
Total Number of Collisions	1084	100.0

Observations

Pedestrian casualty collisions were fairly evenly distributed across all months of the year. October accounted for the largest number of collisions, while February and April experienced the least number of pedestrian crashes.

Table 8.2**Casualty Collisions Involving Pedestrians:****Day of Week****1994**

Day of Week	N	%
Monday	146	13.5
Tuesday	158	14.6
Wednesday	178	16.4
Thursday	166	15.3
Friday	199	18.4
Saturday	163	15.0
Sunday	74	6.8
Total Number of Collisions	1084	100.0

Observations

Pedestrian casualty collisions were most likely to occur on Wednesdays and Fridays and least likely to occur on Sundays.

Table 8.3**Casualty Collisions Involving Pedestrians:****Time Period****1994**

Time Period	N	%
11:00 p.m. - 2:59 a.m.	127	11.7
3:00 a.m. - 6:59 a.m.	47	4.3
7:00 a.m. - 10:59 a.m.	174	16.1
11:00 a.m. - 2:59 p.m.	240	22.1
3:00 p.m. - 6:59 p.m.	332	30.6
7:00 p.m. - 10:59 p.m.	158	14.6
Unspecified	6	0.6
Total Number of Collisions	1084	100.0

Observations

Pedestrian casualty collisions were most likely to occur during the evening rush-hour period from 3:00 p.m. to 6:59 p.m. These collisions were least likely to occur during the early morning hours (3:00 a.m. to 6:59 a.m.).

Table 8.4**Casualty Collisions Involving Pedestrians:****Location****1994**

Location	N	%
Urban	1013	93.5
Rural	71	6.5
Total Number of Collisions	1084	100.0

Observations

The majority of pedestrian casualty collisions (93.5%) occurred in urban areas. Only 6.5% occurred in rural areas.

Table 8.5**Casualty Collisions Involving Pedestrians:****Driver Action*****1994**

Driver Action	N	%
Driving Properly	477	49.3
Failed to Yield Right of Way to Pedestrian	267	27.6
Backed Unsafely	63	6.5
Disobey Traffic Signal	21	2.2
Ran Off Road	16	1.7
Followed Too Closely	10	1.0
Stop Sign Violation	7	0.7
Improper Passing	5	0.5
Left Turn Across Path	5	0.5
Failed to Yield Right of Way Uncontrolled Intersection	5	0.5
Improper Turn	4	0.4
Yield Sign Violation	2	0.2
Left of Center	2	0.2
Other	82	8.5
Total Number of Drivers	967	100.0

Observations

49.3% of the drivers involved in pedestrian crashes were recorded as driving properly. However, 27.6% of the drivers involved in pedestrian casualty collisions failed to yield right of way to the pedestrian.

*Based on those cases where driver action was specified on the collision report form.

Table 8.6**Age of Pedestrian Casualties:****1994**

	Pedestrians Killed	Pedestrians Injured	Total Pedestrian Casualties	Pedestrian Casualty Rate Per 10,000 Population*	
Age in Years	N	N	N	%	
Under 5	---	39	39	3.5	1.9
5 - 9	4	110	114	10.2	5.4
10 - 14	---	99	99	8.9	4.8
15 - 19	5	150	155	13.9	8.2
20 - 24	4	113	117	10.5	5.9
25 - 29	5	75	80	7.2	3.6
30 - 34	4	95	99	8.9	3.8
35 - 44	7	139	146	13.1	3.1
45 - 54	7	81	88	7.9	3.0
55 - 64	8	42	50	4.5	2.5
65 and over	11	92	103	9.2	4.0
Unspecified	---	24	24	2.2	---
Total Number of Pedestrian Casualties	55	1059	1114	100.0	

Observations

The casualty rate per population was highest for pedestrians between the ages of 15 and 19. The lowest casualty rate was recorded for persons under 5 years of age.

*Source: Based on estimates of the Alberta population by age groups and sex, July 1, 1993, Statistics Canada.

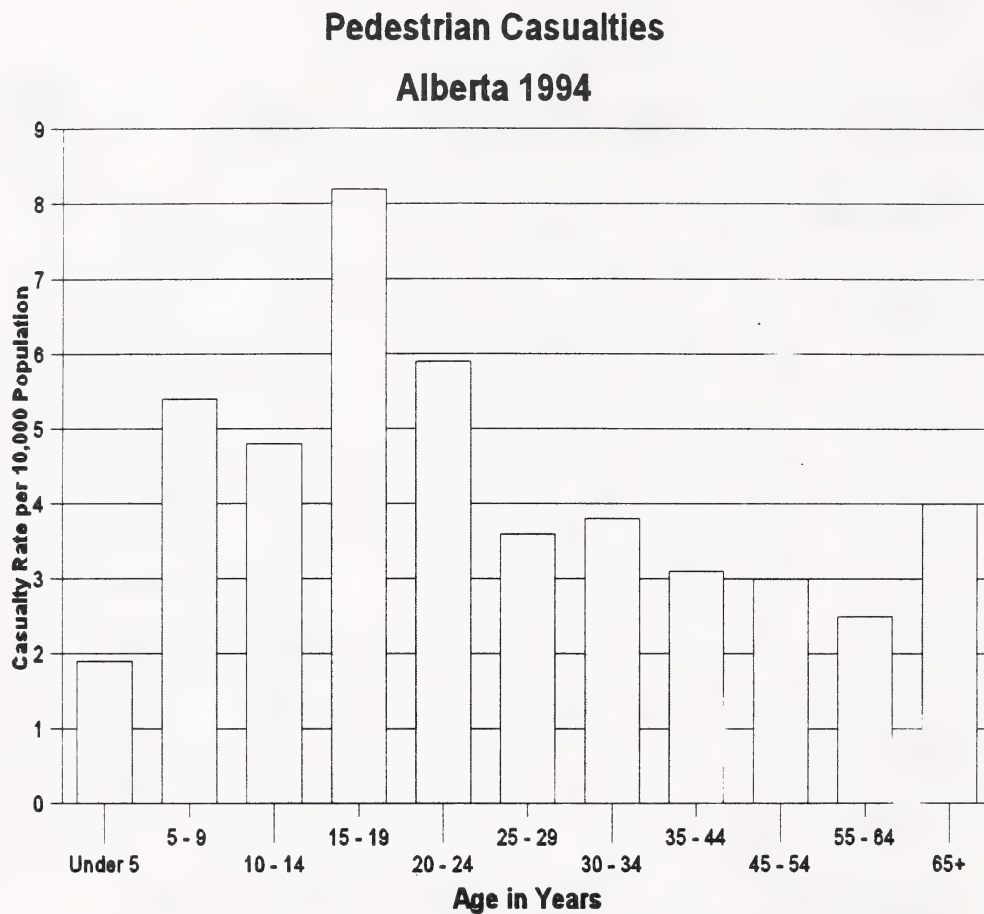


Figure 7

Table 8.7**Casualty Collisions Involving Pedestrians:****Condition of Pedestrian*****1994**

Condition of Pedestrian	Pedestrians in Fatal Collisions		Pedestrians in Injury Collisions		Total Pedestrians in Casualty Collisions	
	N	%	N	%	N	%
Normal	23	44.2	694	80.4	717	78.4
Had Been Drinking	14	26.9	66	7.7	80	8.7
Alcohol Impaired	13	25.0	71	8.2	84	9.2
Total Alcohol Involvement	27	51.9	137	15.9	164	17.9
Impaired by Drugs	---	---	1	0.1	1	0.1
Fatigued/Asleep	---	---	---	---	---	---
Other	2	3.8	31	3.6	33	3.6
Total Number of Pedestrians	52	100.0	863	100.0	915	100.0

Observations

Of pedestrians involved in injury collisions, 15.9% had consumed alcohol before the collision, compared to 51.9% involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol increased dramatically.

*Based only on those cases where pedestrian condition was specified on the collision report form.

Table 8.8**Alcohol Involved Casualty Collisions:****Age of Drinking Pedestrians*****1994**

Age in Years	N	%	Rate per
			10,000 Population**
Under 10	---	---	---
10 - 14	---	---	---
15 - 19	20	12.2	1.1
20 - 24	36	22.0	1.8
25 - 29	24	14.6	1.1
30 - 34	21	12.8	0.8
35 - 44	37	22.6	0.8
45 - 54	10	6.1	0.3
55 - 64	8	4.9	0.4
65 and over	4	2.4	0.2
Unspecified	4	2.4	---
Total Number of Pedestrian Casualties	164	100.0	

Observations

Of those pedestrians who had consumed alcohol prior to the collision, the highest rate of involvement per 10,000 population was for the age group 20-24 years of age.

*Based on those cases where Pedestrian Condition was specified on the collision report form.

**Source: Based on estimates of the Alberta population by age groups and sex, July 1, 1994, Statistics Canada.

Bicyclists

- Casualty collisions involving bicycles were more likely to occur between the months of May and September.
- Weekdays experienced the most casualty collisions involving bicycles. As well, the largest number of these crashes (42.7%) occurred during the evening rush-hour period.
- Young bicyclists, 10-14 years of age, were the group most frequently involved in bicycle casualty crashes.
- An improper action on the part of the bicyclist was recorded for approximately 63.0% of those involved in casualty crashes. Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right-of-way at an uncontrolled intersection, disobey a traffic signal, or be left of center.
- Only 4.1% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

Table 9.1**Casualty Collisions Involving Bicycles:****Month of Occurrence****1994**

Month	N	%
January	6	0.9
February	5	0.8
March	23	3.5
April	69	10.5
May	102	15.5
June	95	14.5
July	93	14.2
August	87	13.3
September	100	15.2
October	58	8.8
November	9	1.4
December	8	1.2
Unspecified	1	0.2
Total Number of Collisions	656	100.0

Observations

The majority of casualty crashes involving bicycles occurred during the months of May to September.

Table 9.2**Casualty Collisions Involving Bicycles:****Day of Week****1994**

Day of Week	N	%
Monday	95	14.5
Tuesday	111	16.9
Wednesday	111	16.9
Thursday	107	16.3
Friday	124	18.9
Saturday	57	8.7
Sunday	49	7.5
Unspecified	2	0.3
Total Number of Collisions	656	100.0

Observations

Casualty collisions involving bicycles were more likely to occur on weekdays.

Table 9.3**Casualty Collisions Involving Bicycles:****Time Period****1994**

Time Period	N	%
11:00 p.m. - 2:59 a.m.	22	3.4
3:00 a.m. - 6:59 a.m.	12	1.8
7:00 a.m. - 10:59 a.m.	92	14.0
11:00 a.m. - 2:59 p.m.	128	19.5
3:00 p.m. - 6:59 p.m.	280	42.7
7:00 p.m. - 10:59 p.m.	115	17.5
Unspecified	7	1.1
Total Number of Collisions	656	100.0

Observations

The largest proportion of casualty crashes (42.7%) involving bicycles occurred during the evening rush-hour period of 3:00 p.m. - 6:59 p.m.

Table 9.4**Casualty Collisions Involving Bicycles:****Age and Sex of Bicyclist****1994**

Age of Bicyclist	Male		Female		Total*	
	N	%	N	%	N	%
Under 5	6	0.9	2	0.3	8	1.2
5 - 9	81	12.3	31	4.7	114	17.3
10 - 14	116	17.6	41	6.2	158	23.9
15 - 19	66	10.0	22	3.3	91	13.8
20 - 24	54	8.2	16	2.4	72	10.9
25 - 29	40	6.1	15	2.3	55	8.3
30 - 34	43	6.5	13	2.0	56	8.5
35 - 44	37	5.6	17	2.6	54	8.2
45 - 54	13	2.0	3	0.5	16	2.4
55 - 64	7	1.1	1	0.2	8	1.2
65 and over	8	1.2	1	0.2	9	1.4
Unspecified	7	1.1	7	1.1	19	2.9
Total Number of Bicyclists	478	72.4	169	25.6	660	100.0

Observations

The majority of bicycle casualty collisions involved male bicyclists. The 10-14 year old age group was most frequently involved in these collisions.

*Total includes bicyclists whose sex was not specified on the collision report form.

Table 9.5

Casualty Collisions Involving Bicycles:

Action of Bicyclist*

1994

Action of Bicyclist	N	%	Driver Action In Total Casualty Collisions (All Vehicle Types)
			%
Driving Properly	204	37.0	51.2
Disobey Traffic Signal	42	7.6	4.1
Failed to Yield Right of Way Uncontrolled Intersection	39	7.1	1.0
Stop Sign Violation	30	5.4	4.2
Left of Center	22	4.0	1.4
Left Turn Across Path	16	2.9	5.5
Yield Sign Violation	15	2.7	1.1
Improper Passing	12	2.2	0.6
Improper Turn	9	1.6	0.8
Improper Lane Change	7	1.3	1.1
Ran Off Road	6	1.1	7.0
Followed Too Closely	5	0.9	10.2
Failed to Yield Right of Way to Pedestrian	3	0.5	1.4
Other	142	25.7	9.4
Total Number of Bicyclists	552	100.0	

Observations

An improper action on the part of the bicyclist was recorded for 63.0% of those involved in casualty crashes. Compared to operators of all vehicles in casualty collisions, bicyclists were more likely to fail to yield right of way at an uncontrolled intersection, disobey a traffic signal, or be left of center.

*Based on those cases where driver action was specified on the collision report form.

Table 9.6**Casualty Collisions Involving Bicycles:****Condition of Bicyclist*****1994**

Condition of Bicyclist	N	%
Normal	554	94.2
Had Been Drinking	16	2.7
Alcohol Impaired	8	1.4
Total Alcohol Involvement	24	4.1
Impaired by Drugs	1	0.2
Fatigued/Asleep	1	0.2
Other	8	1.4
Total Number of Bicyclists	588	100.0

Observations

Only 4.1% of bicyclists involved in casualty collisions had consumed alcohol before the crash.

*Based on those cases where bicyclist condition was specified on the collision report form.

Traffic Safety Issues

Alcohol Involvement

- A total of 6.9% of drivers involved in injury crashes were judged to have consumed alcohol prior to the crash, compared to 18.8% of drivers involved in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased.
- In terms of involvement per 1,000 licensed drivers, males between 18 and 21 years of age were most likely to have been drinking before the crash. There were over five times as many male drivers as female drivers who had consumed alcohol prior to the collision.
- In 1994, alcohol related casualty crashes were most likely to have occurred in October, on Saturday, and between 11:00 p.m. and 2:59 a.m.
- Figure 8 provides a graphic representation of the involvement of drinking drivers in casualty collisions over the past five years, 1990-1994.

Table 10.1**Condition of Drivers in Casualty Collisions*****1994**

Condition of Driver	Drivers in Fatal Collisions		Drivers in Non-Fatal Injury Collisions		Total Drivers in Casualty Collisions	
	N	%	N	%	N	%
Normal	369	76.4	18643	90.7	19012	.3
Had Been Drinking	57	11.8	740	3.6	797	.8
Alcohol Impaired	34	7.0	686	3.3	720	3.4
Total Alcohol Involvement	91	18.8	1426	6.9	1517	7.2
Impaired by Drugs	2	0.4	25	0.1	27	0.1
Fatigued/Asleep	12	2.5	189	0.9	201	1.0
Other	9	1.9	282	1.4	291	1.4
Total Number of Drivers	483	100.0	20565	100.0	21048	100.0

Observations

Of drivers involved in injury collisions, 6.9% had consumed alcohol before the crash, compared to 18.8% in fatal collisions. As the severity of the collision increased, the involvement of alcohol dramatically increased. Overall, 7.2% of drivers involved in casualty collisions were judged to have consumed alcohol before the crash.

*Based on those cases where driver condition was specified on the collision report form. These numbers do not include bicyclists (see Table 9.6, page 65).

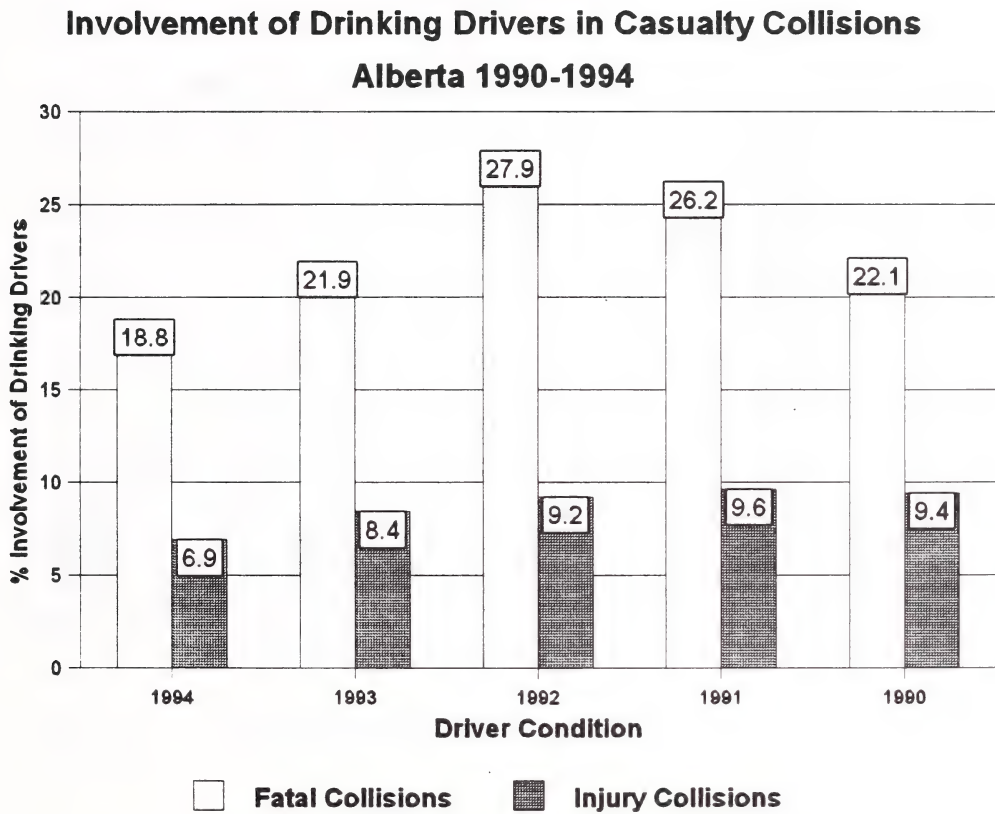


Figure 8

Driver Condition in Casualty Collisions Alberta 1994

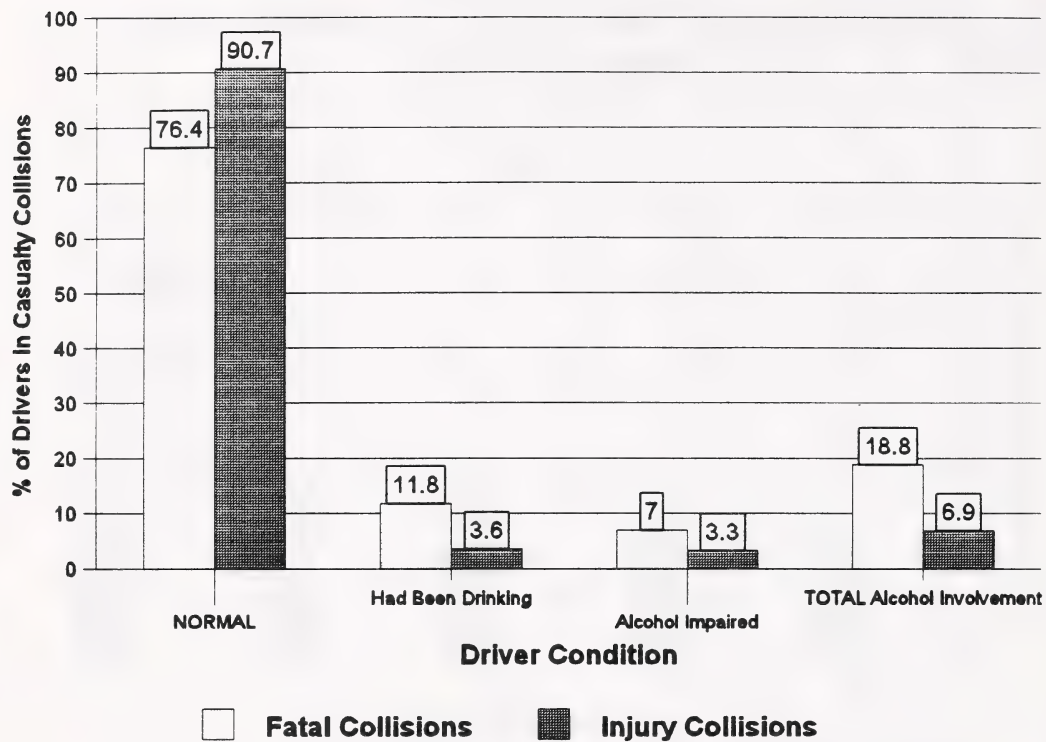


Figure 9

Table 10.2

**Alcohol-Involved Casualty Collisions:
Age and Sex of Drinking Drivers
1994**

Age in Years	Male		Rate Per 1000** Licensed Drivers	Female		Rate Per 1000** Licensed Drivers	Total*		Rate Per 1000** Licensed Drivers
	N	%		N	%		N	%	
Under 16	3	0.2	0.2	11	0.7	1.0	14	0.9	0.5
16 - 17	53	3.5	1.8	20	1.3	0.8	73	4.8	1.3
18 - 19	130	8.6	3.4	28	1.8	0.8	158	10.4	2.2
20 - 21	116	7.6	3.1	17	1.1	0.5	133	8.8	1.8
22 - 24	163	10.7	2.5	18	1.2	0.3	181	11.9	1.5
25 - 29	181	11.9	1.6	45	3.0	0.4	226	14.9	1.0
30 - 34	209	13.8	1.5	38	2.5	0.3	247	16.3	0.9
35 - 44	247	16.3	1.0	37	2.4	0.2	284	18.7	0.6
45 - 54	85	5.6	0.5	20	1.3	0.1	105	6.9	0.3
55 - 64	39	2.6	0.4	4	0.3	0.0	43	2.8	0.2
65 and over	26	1.7	0.3	1	0.1	0.0	27	1.8	0.2
Unspecified	9	0.6	---	1	0.1	---	26	1.7	---
Total Drivers	1261	83.1		240	15.8		1517	100.0	

Observations

Of those collision-involved drivers who had consumed alcohol, there were over five times as many male drivers as female drivers. The majority were male drivers under the age of 45. In terms of involvement per 1,000 licensed drivers, males 18-21 years of age are more likely to have consumed alcohol prior to a casualty collision than any other age group.

Drinking drivers include those indicated on the collision report form as having been drinking prior to the crash and those who were alcohol-impaired at the time of the crash. Whether or not the driver was actually charged is not taken into consideration by the collision report form.

*Includes only drivers whose age and/or sex was specified on the collision report form. Total includes drinking drivers whose sex was not specified on the collision report form.

**Source: Alberta Registries - Motor Vehicles. Operator Statistics, December 31, 1994.

Drinking Drivers Involved in Casualty Collisions Alberta 1994

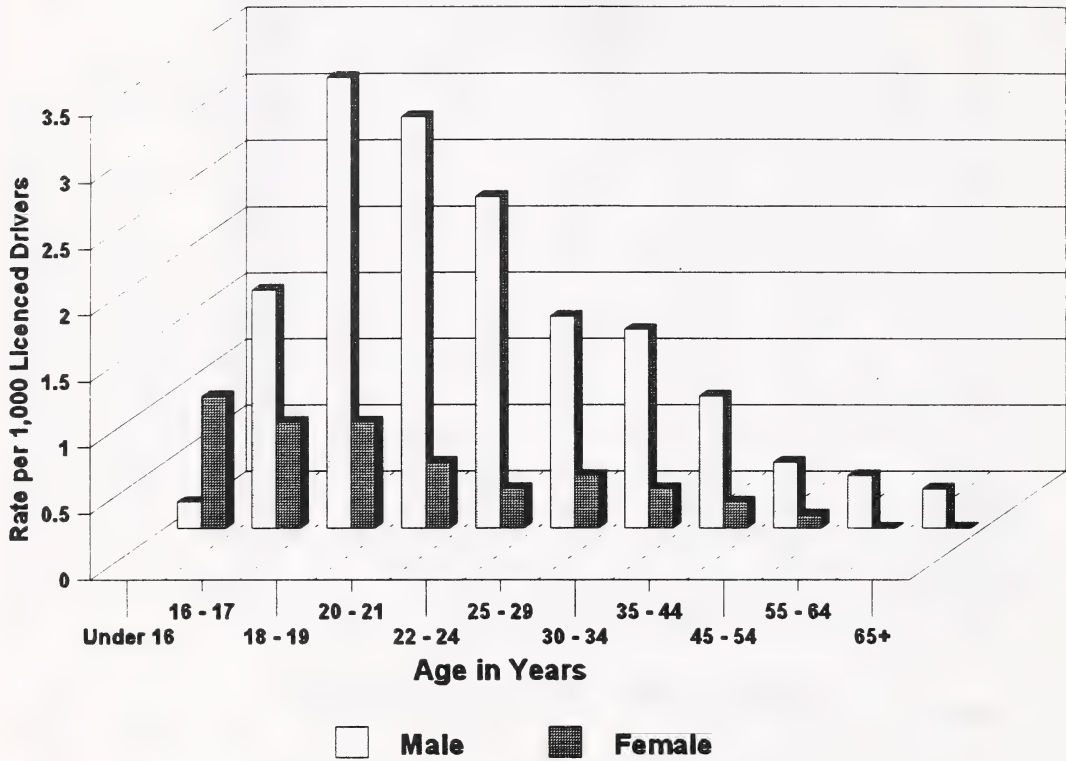


Figure 10

Table 10.3**Alcohol-Involved Casualty Collisions:****Month of Occurrence****1994**

Month	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
January	1	1.1	80	5.7	81	5.5
February	5	5.7	67	4.8	72	4.9
March	5	5.7	115	8.2	120	8.1
April	4	4.6	139	10.0	143	9.6
May	13	14.9	125	9.0	138	9.3
June	9	10.3	145	10.4	154	10.4
July	6	6.9	122	8.7	128	8.6
August	12	13.8	130	9.3	142	9.6
September	8	9.2	125	9.0	133	9.0
October	9	10.3	166	11.9	175	11.8
November	9	10.3	85	6.1	94	6.3
December	6	6.9	96	6.9	102	6.9
Total Number of Collisions	87	100.0	1395	100.0	1482	100.0

Observations

The month of October accounted for the largest proportion of alcohol-involved casualty collisions. The months of January and February accounted for the smallest proportion of alcohol-involved casualty collisions.

Table 10.4**Alcohol-Involved Casualty Collisions:****Day of Week****1994**

Day of Week	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
Monday	8	9.2	100	7.2	108	7.3
Tuesday	7	8.0	132	9.5	139	9.4
Wednesday	13	14.9	138	9.9	151	10.2
Thursday	7	8.0	155	11.1	162	10.9
Friday	10	11.5	270	19.4	280	18.9
Saturday	25	28.7	359	25.7	384	25.9
Sunday	17	19.5	239	17.1	256	17.3
Unspecified	---	---	2	0.1	2	0.1
Total Number of Collisions	87	100.0	1395	100.0	1482	100.0

Observations

The highest number of alcohol-involved fatal collisions occurred on Saturdays and Sundays (28.7% and 19.5%). The highest number of non-fatal injury collisions occurred on Saturdays (25.7%). The smallest number of alcohol-involved casualty collisions occurred on Mondays.

Table 10.5**Alcohol-Involved Casualty Collisions:****Time Period****1994**

Time of Day	Fatal Collisions		Non-Fatal Injury Collisions		Total Casualty Collisions	
	N	%	N	%	N	%
11:00 p.m. - 2:59 a.m.	29	33.3	426	30.5	455	30.7
3:00 a.m. - 6:59 a.m.	18	20.7	198	14.2	216	14.6
7:00 a.m. - 10:59 a.m.	3	3.4	58	4.2	61	4.1
11:00 a.m. - 2:59 p.m.	4	4.6	73	5.2	77	5.2
3:00 p.m. - 6:59 p.m.	11	12.6	218	15.6	229	15.5
7:00 p.m. - 10:59 p.m.	22	25.3	371	26.6	393	26.5
Unspecified	---	6.5	51	3.7	51	3.4
Total Number of Collisions	87	100.0	1395	100.0	1482	100.0

Observations

The late night/early morning time period (11:00 p.m. - 2:59 a.m.) was most likely to record alcohol-involved casualty collisions (30.6%). The morning hours (7:00 a.m. - 10:59 a.m.) were least likely to record alcohol-involved casualty crashes (4.1%).

Alcohol Involved Fatal Collisions Alberta 1994

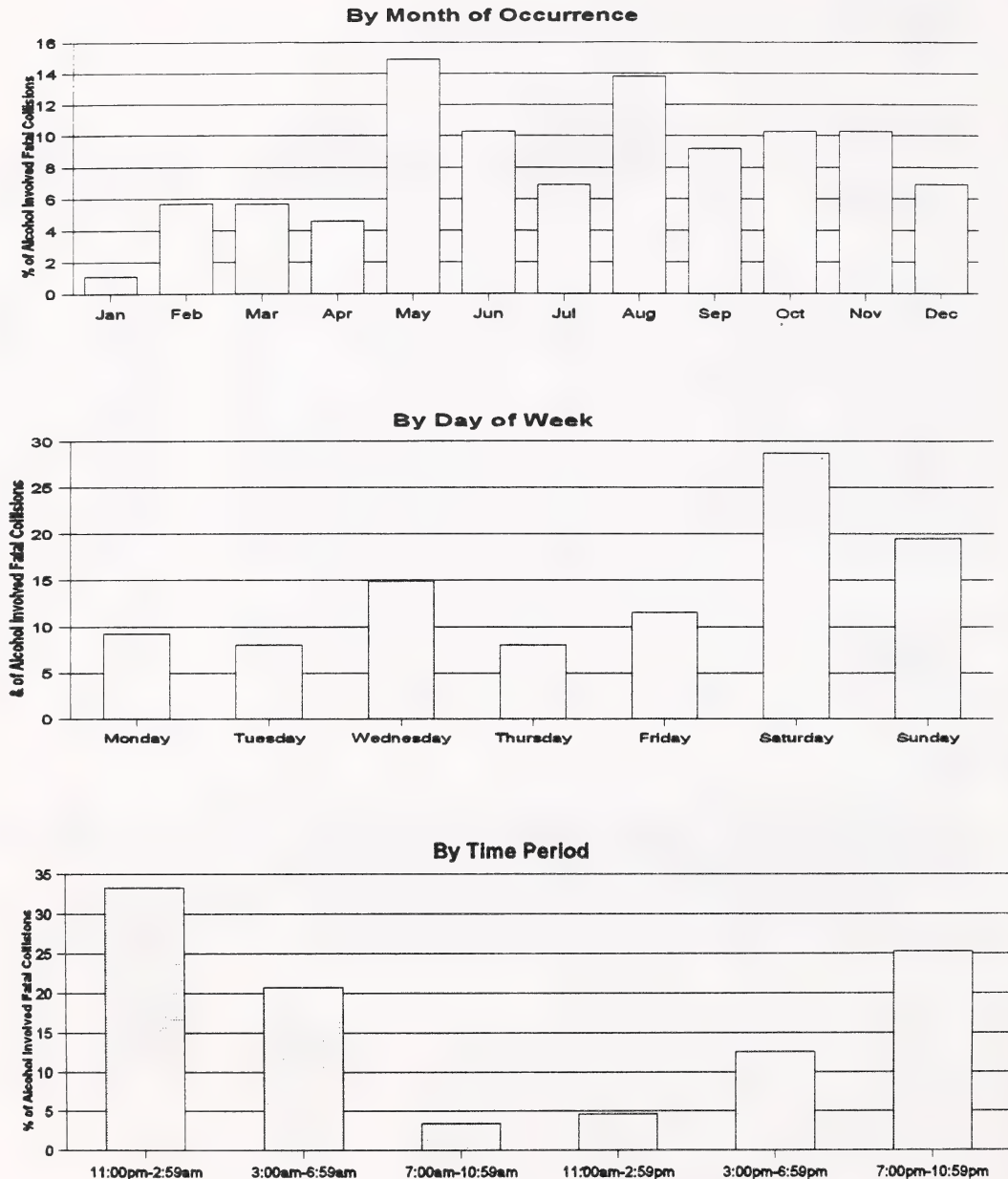


Figure 11

Traffic Safety Issues

Restraint Use

- Collision involved restraint users had a much lower injury rate (13.1%) than those not using restraints (35.2%).
- Non-restraint users were more than twice as likely to be injured than restraint users.

Table 10.6

**Restraint Use of Occupants
and Injury Severity***

1994

Injury Severity	Using Restraints	Not Using Restraints
	%	%
Fatal	0.1	2.3
Major	1.3	10.6
Minor	11.8	24.6
Total Non-Fatal Injuries	13.1	35.2
No Apparent Injury	86.8	62.5
Total	100.0	100.0

Observations

Collision involved restraint users had a much lower injury rate (13.1%) than those not using restraints (35.2%). Non-restraint users were more than twice as likely to be injured than restraint users.

Injury Severity

Fatal - A fatal injury is a death of a person that occurs as a result of a motor vehicle collision within 30 days of the collision.

Major - Persons with injuries or complaint of pain that went to the hospital and were subsequently admitted even if for observation only.

Minor - Persons with injuries or complaint of pain that went to the hospital, were treated in emergency (or refused treatment) and SENT HOME without ever being admitted to the hospital. (Also includes persons who indicate they intend to seek medical attention).

*Based on those cases where occupant restraint use and injury severity were specified on the collision report form.

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